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CERMET PLATINUM/GOLD CONDUCTOR 5837

ESL 5837 is a platinum gold conductor solderable both on alumina and when printed and separately fired over 4905-CH dielectric. It is used in high reliability multilayer circuits where chip carriers are soldered to the top layer. Re-fire capability on alumina is also high. A typical system that is used is 8836/4905-CH/5837. 5837 can also be used on beryllia substrates with good initial adhesion. However, the aged adhesion is lower than that obtained on 96% alumina substrates. This may be improved by firing at 980°C.

PASTE DATA

Rheology:	Thixotropic, screen-printable paste
Viscosity: (Brookfield RVT, 10rpm, ABZ spindle, 25.5 ± 0.5 °C)	350 ± 25 Pa.s
Bonding Mechanism:	Mixed-bonded
Shelf Life (20 - 25 °C):	6 months

PROCESSING

Screen Mesh, Emulsion:		325 S/S, 20 µm
Levelling Time (at 20 °C):		5 - 10 min
Drying Time (at 125 °C):		10 -15 min
Firing Temperature Range:		850 - 1000°C in air
	Optimum:	850°C
	Time at peak:	10 min
Rate of Ascent/Descent:		50 - 60 °C / min
Substrate for Calibration:		96% alumina
Thinner:		ESL 401

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TYPICAL PROPERTIES

Fired Thickness:
(measured on a 2 mm x 2 mm pad on 96% alumina) 12.0 ± 2.0 µm

Approximate Coverage: 55 - 70 cm^2/g

Resistivity: 40 - 65 mΩ/□

Printing Resolution:
(line/space) 0.125 mm / 0.125 mm

Solder Wettability:
(RMA Flux, 5 sec. dip)

62Sn/36Pb/2Ag	(220°C)	95 - 100 %
62Sn/36Pb/2Ag	(250°C, over 4905-CH)	90 - 95 %

Solder Leach:
(No. of 10 sec. dips to double lowest resistance of
100 mm x 0.25 mm conductor, 62Sn/36Pb/2Ag, 220°C) 10 dips

Adhesion:
(90° pull, 2 mm x 2 mm pads, 62Sn/36Pb/2Ag)

Initial pull strength:		5.5 - 8.0 kg
Aged 48 hours at 150°C:		3.2 - 6.5 kg
Initial pull strength:	on 4905-CH	4.0 - 8.0 kg
Aged 48 hours at 150°C:	on 4905-CH	3.2 - 5.0 kg